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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/895,153	07/02/2001	Koon Gee Neoh	1781-0233P	9536
2292	7590	07/05/2005		
BIRCH STEWART KOLASCH & BIRCH			EXAMINER	
PO BOX 747			TSOY, ELENA	
FALLS CHURCH, VA 22040-0747			ART UNIT	PAPER NUMBER
			1762	

DATE MAILED: 07/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/895,153	NEOH ET AL.	
	Examiner	Art Unit	
	Elena Tsoy	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 12 May 2005.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 36,39 and 41-52 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) 39 and 41-52 is/are allowed.

6) Claim(s) 36 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

- Certified copies of the priority documents have been received.
- Certified copies of the priority documents have been received in Application No. _____.
- Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.

4) Interview Summary (PTO-413) Paper No(s) _____.

5) Notice of Informal Patent Application (PTO-152)

6) Other: _____

Response to Amendment

1. Amendment filed on May 12, 2005 has been entered. Claims 53-58 have been cancelled.

Claims 36, 39, 41-52 are pending in the application.

Double Patenting

2. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

3. Rejection of Applicant claims 57 and 58 under 37 CFR 1.75 as being a substantial duplicates of claims 54 and 55 has been withdrawn due to cancellation of the claims.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Rejection of claims 53-58 under 35 U.S.C. 103(a) as being unpatentable over Afzali-Ardakani et al (US 5,776,370) in view of IBM Technical Disclosure Bulletin (1975), further in view of Williams et al (4,414,080) has been withdrawn due to cancellation of the claims.

6. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al (JP56026977) in view of Pohl et al (US 4,455,233), Williams et al (US 4,414,080) and Beratan et al (US 5,016,063).

Sato et al disclose a method for preparing a photochromic film formed by attaching a viologen salt to a polymer substrate such as chloromethylated polystyrene (a polymer having a polyethylene backbone and pendant benzyl chloride groups) by chloromethylating polystyrene using $\text{CH}_3\text{OCH}_2\text{Cl}$ (See formula (8) and reacting benzyl chloride groups of the chloromethylated polystyrene with 4,4' bipyridyl mono aralkyl halide compound, and then coating the formed viologen salt with a polymeric alcohol such as polyvinyl alcohol for **sensitizing** the **photoreduction** of viologen salt (electron acceptor) (See Formula (1); Abstract). The film develops a *bright bluish violet color*, when irradiated with a 200W mercury-arc lamp (claimed near-ultraviolet radiation) (See Abstract). In other words, upon exposure to near-ultraviolet radiation, polyvinyl alcohol polymer reduces viologen salt by acting as an electron donor, i.e. polyvinyl alcohol polymer exhibits electrical conductivity.

Sato et al fails to teach that (i) benzyl chloride groups can be grafted on a polymeric substrate other than phenyl-containing substrate using vinyl benzyl chloride instead of $\text{CH}_3\text{OCH}_2\text{Cl}$; (ii) an equimolar mixture of 4,4' bipyridine and p-xylene dihalide is used instead of 4,4' bi pyridyl mono aralkyl halide compound; (iii) instead of polyvinyl alcohol, polyaniline can be used as electron donor for coating the viologen salt layer.

As to (i), Pohl et al teach that pendant benzyl chloride groups can be easily grafted onto a polyethylene (non-phenyl-containing) substrate by irradiation the substrate in a solution of vinyl benzyl chloride (See column 8, lines 3-15).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have prepared a polymer substrate of Sato et al having pendant benzyl chloride groups attached to a polyethylene backbone by irradiating a polyethylene substrate in a solution of vinyl benzyl chloride instead of chloromethylating polystyrene using $\text{CH}_3\text{OCH}_2\text{Cl}$ since Pohl et al teach that pendant benzyl chloride groups can be easily grafted onto a polyethylene (non-phenyl-containing) substrate by irradiation the substrate in a solution of vinyl benzyl chloride.

As to (ii), Williams et al teach that a layer of viologen can be formed by reaction of 4,4'-bipyridyl at temperatures from about 20^0C to 60^0C , with an equimolar amount of an organic dihalide (See column 6, lines 36-59) in the presence of the substrate (See column 7, lines 1-2), i.e., can be formed on the substrate *in situ*.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed a layer of viologen salt, e.g. viologen dihalide, on a substrate in Sato et al in view of IBM Technical Disclosure Bulletin *in situ* since Williams et al teach that a layer of viologen can be formed by reaction of 4,4'-bipyridyl with an equimolar amount of an organic dihalide in the presence of the substrate.

As to (iii), Beratan et al teach that polyaniline is suitable for the use as electron donor for viologen salt acceptor (See column 6, lines 16-30).

It is held that the selection of a known material based on its suitability for its intended use supported a *prima facie* obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). See also *In re Leshin*, 227 F.2d 197, 125 USPQ 416 (CCPA 1960) (selection of a known plastic to make a container of a type made of plastics prior to the invention was held to be obvious); *Ryco, Inc. v. Ag-Bag Corp.*, 857 F.2d 1418, 8 USPQ2d 1323 (Fed. Cir. 1988).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used polyaniline as a donor in Sato et al since Beratan et al teach that polyaniline is suitable for the use as electron donor for viologen salt acceptor.

It is the Examiner's position that photoreduction of the photochromic film of Sato et al in view of Beratan et al can be performed with near-ultraviolet radiation since polyaniline is a well known electron donor and the structure of the photochromic film of Sato et al in view of Beratan et al is substantially identical to that of claimed invention.

7. The prior art made of record and not relied upon is considered pertinent to applicant disclosure.

Robello et al (US 4,796,971) teach that 200 W mercury lamp provides near-UV radiation (See column 42, lines 20-21).

Allowable Subject Matter

8. Claims 39, 41-52 are allowed.

The following is an examiner's statement of reasons for allowance: Claims 39 and 52 are allowed because the prior art of the record does not teach or suggest forming a polymeric material *in situ* on viologen coated substrate or on a substrate before coating viologen. Claims 41-51 are allowed as further limiting allowed claim 39.

9. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

10. Applicant's arguments with respect to rejected claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elena Tsoy whose telephone number is (571) 272-1429. The examiner can normally be reached on Mo-Thur. 9:00-7:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-141523. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Elena Tsoy
Primary Examiner
Art Unit 1762

ELENA TSOY
PRIMARY EXAMINER
ETSOY

June 22, 2005